

ABSTRACT

A continuous adsorption facility is used to purify a liquid stream that contains impurities. A solid adsorbent is used having a special affinity for the impurities over the desired components in the liquid feed. An adsorber is constructed, employing gravity for the transfer of adsorbent between stages with a series of stages each having fluidized beds with limited bed expansion characteristics where the solid adsorbent countercurrent- contacts the upwardly flowing fresh feed introduced at the base. The adsorbent is regenerated with return of most of the desired components from the porous solids becoming part of the adsorber-treated product. Impurities are further removed during regeneration and disposed of separately. Using a novel regeneration arrangement, the reactivating gas may be reduced to below 5% of prior requirements. Capital investment and operating costs economically afford ultra-low sulfur clean gasoline meeting standards imposed by auto manufacturers worldwide.